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THE GARDEN CALENDAR.

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A radio discussion by W. R. Beattie and John W. Roberts, Bureau of Plant Industry, delivered in the Department of Agriculture period of the National Farm and Home Hour, Tuesday, April 18, 1933, broadcast by a network of 49 associate NBC radio stations.

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BEATTIE:

Hello Folks: I think everybody likes good, well-ripened fruit, especially peaches and cherries in their seasons. Unfortunately, our peaches, our plums, and our cherries too are subject to a most troublesome disease known as "Peach Brown Rot" which very frequently causes our fruit to turn brown and rot just about the time it begins to ripen, or after it has gone to market. Sometimes the whole crop will rot on the trees almost overnight, especially in warm, damp weather. A lot of us are looking forward with the hope that we may get a little money out of our peach, cherry and plum crops this year, so I thought you would like a few pointers on the best way to prevent the brown rot getting in its work. Mr. John W. Roberts, one of the fruit-disease workers of the Department has given this matter of brown-rot control a lot of study, and he's here with me today, so I'm going to ask him to tell you some of the things he has learned about the brown-rot disease, and what you can do to protect your fruit from it. First, Roberts, will you tell the folks about the nature of the brown-rot disease?

ROBERTS:

Well Beattie, the peach brown rot is a fungus which causes peaches, plums, cherries, and other stone fruits to rot very quickly, especially in warm, muggy weather. The scientific name of this fungus is Sclerotinia fructicola, but we'll just call it "Brown rot," or "Peach brown rot."

BEATTIE:

You say the peach brown rot is a fungus disease. I suppose it spends the winter in the dormant stage somewhere in the orchard?

ROBERTS:

Yes, the brown rot spends the winter right in the orchard. We find it on the old mummied fruits that hang on the trees, or lie half buried on the ground, also in cankers on the twigs and branches of the trees. Those old mummied or shriveled fruits were attacked by the disease before they ripened, and as a result many of them stuck tight to the twigs and simply dried on the trees. These mummied fruits carry the fungus over the winter, in fact, they will often hang on the trees a whole year or until another crop of fruit ripens. When the weather becomes warm in the spring, or just at the time that the peach trees are in bloom, the fungus that has wintered over on the mummies and in cankers on the trees forms spores, and as the spore centers or pustules burst, the spores are thrown upward in a small cloud that you can often see with the naked eye. These clouds of dust-like spores are caught by upward currents of air, and are carried through the trees and settle in the blossoms where they cause a trouble that we call blossom-blight.

BEATTIE:

Well, -- then this disease attacks the blossoms as well as the fruit, I take it?

(over)

ROBERTS:

That's right, and the first symptom of the infection is a faint discoloration of the part of the flower where the infection takes place. And, by the way, the infection may be on the petals or showy part of the flowers, or it may be on the stamens and the pistil which are the inner parts of the flower and which form the fruit. When once started in a flower the fungus grows rapidly, and the whole blossom is soon brown and shriveled.

BEATTIE:

Do the blossoms that are affected by the disease drop from the trees?

ROBERTS:

Sometimes they drop off but often remain on the tree and simply dry up, and in that way become infection centers for the further spread of the disease. Quite often the disease passes from the blossoms to the twigs, and we may have a bad case of twig blight as a result. In that way the blighted twigs become another source of carry-over and reinfection. The twigs often become cankered and the disease will live for a long time in these cankers. It often happens that the loss of blossoms from the attacks of brown rot is not great and plenty of sound blossoms may be left on the tree to make a good crop, but the disease usually plays a return engagement and attacks the crop just before it ripens.

BEATTIE:

Well, how does the brown rot disease usually spread?

ROBERTS:

By the wind, by the spattering of raindrops, and to some degree, by insects. The common plum curculio is ideally equipped for carrying the spores of the disease on the under side of its body. In experiments conducted jointly by the Bureau of Entomology and the Bureau of Plant Industry, we have found that in most years about 90 per cent of the brown rot infections occurring in peach orchards take place through curculio punctures. In those favored sections of the country where you do not have insect injury or punctures of the skin of the fruit, brown rot is not an important orchard disease.

BEATTIE:

That's certainly an indictment of the plum curculio for the part it plays in causing our losses from brown rot.

ROBERTS:

It certainly is, in fact, the control of these insects is just as important as any other measure to prevent the spread of the disease.

BEATTIE:

Now, Roberts, what can we fruit growers do to protect our peaches, plums, and cherries from brown rot?

ROBERTS:

Well, Beattie, first of all, we can adopt sanitary methods of caring for our trees. This matter of controlling brown rot is something that you've got to keep right after all the time. Where the disease has gotten a start you should gather all of the old mummied fruits that are hanging on the trees, and either burn or bury them. When you are pruning your trees cut out all of the cankered twigs and stems and burn them.

BEATTIE:

What about the mummied fruits that are on the ground?

ROBERTS:

They can be plowed under. We have found that if the mummies are turned under to a depth of 6 inches or more, they no longer spread infection. They should by rights be plowed under in the fall, but spring plowing before the trees blossom will help.

BEATTIE:

Does the brown rot live on wild peach and plum trees?

ROBERTS:

Yes, the fruits on these wild trees become infected and serve as sources of infestation for your orchard. Destroy any of these wild trees near your orchard. But sanitary measures alone will not completely control the brown rot disease. The clean-up only supplements the real remedy which consists of spraying or dusting, or a combination of both.

BEATTIE:

What is the best spray and dust for controlling brown rot?

ROBERTS:

The best spray we have used consists of sulphur in a form which will stay in suspension in water, or mixed with something which will hold it in suspension. Finely ground sulphur is the dust that we use. This is not the common sulphur that you buy in the drug stores, but a very finely ground sulphur that is prepared especially for dusting purposes. Under most conditions, I believe the spray is better than the dust because it sticks better.

BEATTIE:

I believe you said that the plum curculio is responsible for a large part of the spread of brown rot?

ROBERTS:

Yes, and we usually add 5 per cent of powdered lead arsenate to the sulphur dust and mix it thoroughly. That makes one dusting do double duty by controlling brown rot, and destroying the plum curculio at the same time. We also add 15 per cent of hydrated lime, so if you want to mix 100 pounds of dust take 80 pounds of dusting sulphur, 15 pounds of hydrated lime, and 5 pounds of lead arsenate. Most fruit growers buy this dust ready mixed.

BEATTIE:

And what do you recommend as a spray for the control of brown rot?

ROBERTS:

Self-boiled lime sulphur consisting of 3 pounds of stone lime, 8 pounds of sulphur, and 50 gallons of water. You see the slaking of the stone lime in a small amount of water generates enough heat to boil the mixture for about 5 minutes then add cold water to check the boiling. Then you simply add enough cold water to bring the mixture up to 50 gallons. You can buy ready prepared spray substitute for the self-boiled lime sulphur.

(over)

BEATTIE:

Another question, Roberts. When should we apply the dust or the spray?

ROBERTS:

That depends on where you live. In the eastern United States, except in Georgia and the Gulf Coast region, make the first application when the calyces or "shucks" are shedding. That's usually about 10 days after the petals fall. Make the second application two weeks after the first and the third about one month before the variety is expected to ripen. In Georgia and the Gulf States, make the first application at the time 75 per cent of the petals have fallen, the second when the "shucks" are shedding, the third two weeks after the second and a fourth one month before the variety is expected to ripen. The first and second applications are mainly for the control of curculio.

BEATTIE:

Does that complete the schedule?

ROBERTS:

Yes, unless you make a light application of sulphur, either as a spray or dust just before the fruit is picked. This will go a long way toward protecting the fruit in transit and on the market. Neither lime nor lead arsenate should be included in this application, just the sulphur alone.

BEATTIE:

Does thinning the fruit on your trees help to control the spread of brown rot?

ROBERTS:

Yes, if you thin your fruit on the trees so that the fruits do not touch you can get a better coverage of dust or spray. Where the fruits touch each other the disease organisms will lodge between the fruits and start the rot, and it soon spreads to other fruits. Of course, this applies mainly to peaches and plums, as it would not pay to thin cherries.

BEATTIE:

Thank you, Roberts. And now folks let me add that you can get more detailed information on this matter of controlling brown rot of your peaches, plums, and cherries from your county agent, or from your State college of agriculture. I am sure that Mr. Roberts will also be glad to answer any questions you may send by mail.